

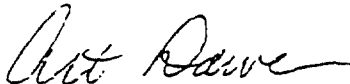
A number of traffic sensitive elements were also not modeled such as the impact that additional TCAP traffic would have on STP capacity and number of links from STPs to SCPs. The model did not include fixed non-traffic sensitive components such as software costs or a number of other network elements and expenses needed to implement LNP all of which will have an effect on the cost and where a particular break point occurs. In addition the model does not consider the time value of money since it will likely take a number of years to reach a high level of penetration. Also, as time passes, price/performance ratios of various network elements can dramatically change. Specifically, the model does not include:

- LRN Switch Feature Costs
- Operations Support Costs
- SMS Facilities Costs
- Operator Services
- Ten Digit Global Title Translation Costs
- Impact of TCAP traffic on STPs and SS7 links

The break points and costs of different LNP triggering algorithms will be unique to every network configuration. Such factors as different technology, topology, network size, pattern of LNP roll-out, mix of multi-carrier configurations, mix of MF vs. SS7 trunking and multi-vendor network elements as well as operational efficiencies need to be considered. In order to reach quantitative conclusions about a real LEC's network, all of the impacts need to be included. The network configuration of the specific LEC needs to be captured by more sophisticated modeling tools with traffic data obtained from real network measurements. Only after a network study of this magnitude is conducted can conclusions be reached about costs and where the break points occur.

Please refer to the previously provided user manual for the Generic LNP Cost Model. It may give more detailed insight into how costs differ for a specific network and the elements it did not capture.

Sincerely,



Art Dawe
Project Manager
Sales Eastern Region

cc: J. Gallagher M. Vaden A. Smith G. Norfleet



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Mary R. Vaden
Director - Regulatory Affairs

February 29, 1996

Mr. Geoffrey Waldau
Chairman-Maryland Local Number Portability Consortium
Public Service Commission of Maryland
6 St. Paul Centre
Baltimore, Maryland 21202

Re: Bell Atlantic Position Regarding Illinois Local Number
Portability (LNP) Requirements

Dear Geoff,

As you are aware, the Maryland LNP Consortium has been reviewing the LNP requirements documents that are under development in Illinois. These documents reflect only the Illinois LNP requirements for Network Elements such as End Office and Tandem Switches, Operator Services Switches, Signal Transfer Points (STPs), and Service Control Points (SCPs) using the Location Routing Number (LRN) call model.

The objective of the Maryland Consortium review has been to modify the Illinois requirements documents to meet the needs of the Service Providers and end users in the State of Maryland.

While Bell Atlantic has supported the selection of the LRN call model in Maryland, from the very beginning of the Maryland Consortium review, we have gone on record with serious concerns regarding the Illinois requirements.

Two of the most critical concerns raised by Bell Atlantic are the following:

- 1) the Illinois requirements offer no mechanism for eliminating, or even reducing, the tremendous volume of unnecessary database queries on intraLATA interoffice calls to non-ported subscribers, and,
- 2) the Illinois requirements are designed such that three major switch vendors, Lucent Technologies (formerly AT&T Network Systems), Nortel, and Siemens Stromberg-Carlson (SSC), will actually develop three different implementations of the Location Routing Number (LRN) call model in order to meet the short time allowed for development and deployment of switch features in Illinois.

In addressing the first concern, it should be noted that Maryland end users place well over 11 Billion intraLATA calls annually. The majority of these calls are within the Baltimore and Washington LATAs. It is likely that most or all of the NXX codes in these LATAs will be opened to portability. This means that - under the Illinois plan - every intraLATA interoffice call to these NXX codes would result in an LNP database query. The majority of the end users within these portable NXX codes could remain Bell Atlantic end users. Although a database query is still launched, calls to these end users do not require additional routing information from the LNP database. As a result, billions of intraLATA interoffice calls in the State of Maryland would result in needless LNP database queries. These unnecessary queries result in an inefficient use of all local and interexchange service providers' signaling networks, and may significantly increase the number of LNP databases required to accommodate these needless queries. Bell Atlantic has initiated discussions with Bellcore and our switch vendors in order to explore possible development of an acceptable mechanism that will eliminate these unnecessary database queries.

With regard to the second concern, the prospect of having three different LNP development approaches is unacceptable to Bell Atlantic. Lucent and Nortel are proposing two entirely different Advanced Intelligent Network (AIN) triggers, while SSC is proposing a different platform, the Intelligent Network (IN), which is based on an entirely different messaging protocol than AIN. All three switch vendors have a large presence in the Bell Atlantic network. Due to the size of our network, implementing three such different varieties of LRN may have a tremendous impact on areas such as provisioning, maintenance, and trouble-shooting. In addition, our SCP vendor would be required to develop LNP functionality that would support two different platforms and three different triggers. Again, adhering to the Illinois requirements would likely add additional cost to LNP development for the State of Maryland. Discussions with our switch vendors have revealed that these differences in vendor approaches were driven solely by the need to meet the implementation date set in the State of Illinois. As a result, Maryland and the rest of the nation may incur unnecessary cost by perpetuating the inefficiencies required to meet a date, set perhaps arbitrarily, in a single state.

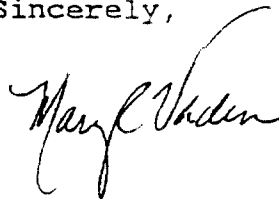
Bell Atlantic, along with several other Companies, is funding Bellcore to develop Local Number Portability requirements. In fact, an Article was published in the January Bellcore Digest requesting early industry interaction regarding these requirements. The objective is to develop a standard set of LNP requirements to which all Network Element vendors can develop. Bell Atlantic feels this development effort will result in a more consistent approach to LNP implementation with a potentially sizable savings in vendor development costs and ongoing support costs for LNP.

The attached letter from Lucent Technologies (formerly AT&T Network Systems) refers to this RBOC/Bellcore requirements development initiative. Bell Atlantic completely agrees with Mr. Lichter's comment that **"the industry is best served by a single specification defining a national solution to LNP that is extensible to future enhancements or options"**. His claim or implication, however, that the requirements specifications produced in Illinois constitute a national standard or **"define a single LNP solution"** to which all vendors can develop LNP functionality, is totally inaccurate in Bell Atlantic's opinion. The Illinois specifications define **three** LNP solutions in order to accommodate the three switch vendors' available software development resources. The schedule set in Illinois appears to be driving the requirements rather than any goal for a single solution. Furthermore, the stated claim that the Illinois LNP Workshop **"received industry consensus with the Illinois Generic Switching and Signaling Requirements for Number Portability"** is impossible when only one of the seven RBOCs participated. Lucent Technologies appropriately refers to these requirements as the **"Illinois Generic Switching and Signaling Requirements for Number Portability"**. We agree that these requirements are specific to Illinois. Indeed, what they appear to represent is a private set of standards for Ameritech.

For the reasons stated above, and in the absence of FCC guidance, Bell Atlantic cannot support the Illinois LNP requirements. We will focus our efforts on producing a standard set of requirements that will ensure development of a national Local Number Portability solution.

If you have any questions regarding this matter, please call me on 410-393-3650.

Sincerely,



Attachment

cc: Ms. Nichols
Ms. Gallagher
Mr. Hall
Mr. Sacra

Lucent Technologies
and Life Sciences



To: Number Portability Industry Participants

From: Joe Lichter
Illinois Switching and Signaling Generic Requirements Editor
Lucent Technologies (formerly AT&T-NS)
(708) 224-6476
(708) 713-4833 (fax)

Subject: Bellcore Call for Industry Input

Date: February 13, 1996

In a recent Bellcore Digest, Bellcore is requesting early industry input to a requirements for a Bellcore specification document. As a telecommunications vendor, we are concerned over deviations in requirements that could result from the introduction of another requirements document by another vendor.

Specifically, the ICC Number Portability Workshop has provided an open forum for all the vendors and service providers to discuss their ideas for Local Number Portability (LNP). As a result, the Workshop has formulated requirements specifications for switching, signaling, operator services, billing, measurements, SCP, and SMS. No additional specifications are needed to define LNP since the industry has collectively defined the capability.

The goal of the Illinois NP Workshop has been to define a single LNP solution through evaluation by all participants in Illinois. The industry is best served by a single specification defining a national solution to LNP that is extensible to future enhancements or options. We have been making excellent progress towards this goal and have received industry consensus with the Illinois Generic Switching and Signaling Requirements for Number Portability (Final Draft, 2/2/96). We do not want the progress achieved in Illinois and other states to be side tracked via another specification that cannot interwork with the Illinois solution or is not backward compatible. Any specification provided by Bellcore should be treated as a vendor-specific requirements specification that, if implemented, must adhere to the industry specifications as defined by the Illinois NP Workshop. This is true of any vendor's requirements specification.

We are requesting that the ICC NP Workshop address the issues raised by this memo and reaffirm our requirements for LNP. In addition, we are requesting that each participant, including the ICC, notify Bellcore that the Illinois GRs should be used as the industry input for Bellcore specification documents.

Sincerely,

Joe Lichter

Date: March 11, 1996

To: Zoltan Miko

CC: Roger Durham

Jo Gallagher

Gary Sacra

Andy Smith

Mary Vaden

Ed Rock

From: Lisa C. Franks

Member of Technical Staff - Technology Planning, Bell Atlantic, NSS

Subject: Bell Atlantic P/OS Major Concern re: *Final Draft of
Generic Operator Services Switching Requirements
for Number Portability [Issue 1.0, February 14, 1996]*

Issues with direct impact on requirements

Bell Atlantic has a major concern so noted for the record regarding the Operator Services Switching requirements for alternately billed calls. The current draft of requirements provides for an OSS query to the LNP SCP to determine the LRN of the billed number for inclusion in an AMA module. The routing for an ABS validation query will be done via a 10 digit Global Title Translation during the processing of the regular LIDB query. The LIDB line level Service Provider ID, returned in the LIDB query response and planned for the April, 1997 Release 8.1 of LIDB should be used for the billing information. The ability for the OSS to "dip" the LRN SCP on the billing number is redundant and could add to the call setup duration.



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Mary R. Vaden
Director - Regulatory Affairs

April 10, 1996

Mr. Geoffrey Waldau
Chairman-Maryland Local Number Portability Consortium
Public Service Commission of Maryland
6 St. Paul Centre
Baltimore, Maryland 21202-6806

Re: Local Number Portability: Billing and Rating Subteam Issues

Dear Geoff:

Listed below are the current concerns BA-MD has with respect to the LNP billing and rating issues:

1. The Illinois requirements did not take into consideration any CABS impact for rating wire center to wire center for transport. Bellcore has brought this deficiency to the attention of the Illinois Consortium and as a result, new requirements are being developed. Our concern is the timing of the resolution to this problem and whether or not it will be incorporated as a "patch" which may not meet our access billing requirements.
2. Generic call flows which are acceptable from a CRIS standpoint, need to be expanded further to fully analyze access billing. This process needs to be performed by a multi-disciplined team outside of the consortium meeting process which may not be accomplished in the desired time frame.
3. Requirement #1195V1.01 identified by the Illinois Consortium results in an unacceptable condition for Maryland because of the lack of terminating wire center identification when a undipped call to a ported number is received at an access tandem. When the undipped call is received at the tandem, the LNP query must be performed by the tandem so that the correct terminating wire center is known. This additional requirement has been added to the list of requirements for Maryland.
4. The cost recovery mechanism when finalized will also have to be addressed by the billing and rating team.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Mary R. Vaden", written in dark ink.

March 18, 1996

D. Smith
Vice President - Sales
Ericsson

*b82W P

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R. Fromm
President and CEO
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Boca Raton, Florida 33487

Re: Urgent Request for Information on Local Number Portability

The purpose of this letter is to request your immediate attention to our request for detailed technical information regarding the implementation of the various local number portability (LNP) network architecture solutions. We are extremely interested in identifying a cost effective approach to a number portability implementation that will accommodate a transition to a more robust technical solution (that accommodates geographic number portability) if and when it is required. The switching types that should be addressed in your response are the following:

- Lucent - 1ABSS, 4ESS, 5ESS
- Nortel - DMS 10, DMS 100, DMS 100/200, DMS 200
- Ericsson - AXE 10
- Siemens - HWS

More specifically, we are interested in the implementation of Query On Release (QOR) solution in conjunction with the N-1 (LRN) architecture solution (i.e., as defined in Illinois). The location routing number will be the standard addressing information (to identify the switch) passed between networks for both QOR and N-1 (LRN) architectures. We are also interested in obtaining information relative to the transition from a QOR solution to an N-1 (LRN) solution, which in some cases is the originating network, and the coexistence of both solutions by different network providers.

We would like detailed technical and estimated cost information as described below. Because the industry is moving forward at a rapid pace on Local Number Portability, we are requesting that you provide us with this information by April 15. We would also like to schedule a conference call the week of March 25th to obtain a status on your work-in-progress. The requested technical and cost information is set forth in detail below. Please provide the following information for each of the above listed switches:

1. Detailed estimated cost information for QOR and N-1 (LRN) including any current or planned patents. Include any anticipated switch upgrades required to support either

solution. Also, provide any assumptions made in the pricing information.¹

2. Base your cost estimates for QOR and N-1 (LRN) on a 2Q97 General Availability for each switch type identified above.²

3. Provide detailed information about the following:

- a. Impact of QOR on switch AIN capacity;
- b. Impact of N-1 (LRN) on switch AIN capacity;
- c. If/when N-1 (LRN) may/will exhaust current switch AIN triggering capacity;
- d. Impacts to real time processing; and
- e. Impacts to existing/planned AIN services and the costs associated to handle any additional capacity.

The established Customer Points Of Contact (CPOCs - see attached list) will provide switch data for analysis.

4. A feasibility analysis for QOR as currently defined in ANSI. Include any feature interaction problems, technical advantages and disadvantages.

5. The technical analysis of an incumbent network provider transitioning from QOR to N-1 (LRN). Provide any technical concerns, compatibility issues and all estimated costs associated with the transition. Also provide any considerations of evolving from service provider portability to location portability if so required at a later date.

6. Network interconnection issues and proposed solutions associated with QOR deployed in a terminating network coexisting with the N-1 (LRN) solution in other networks and vice-versa. This analysis should reflect network interconnection issues from all network providers point of view (i.e., originating, N-1, terminating).

7. If QOR is deployed in an intermediate network and the terminating network assumes that the N-1 architecture is used, what is the minimal set of capabilities that would be needed in the terminating network to take advantage of the QOR capabilities in the intermediate network? Include technical details of these capabilities and their estimated costs.

8. To deploy QOR or N-1 (LRN) features on a switch, what is required in addition to AIN 0.1?

1. Because we, as several customers, are interested in the N-1 (LRN) and QOR developments and especially planning process, and since responses have already been provided to some customers, please provide your updated responses to each of our Companies via the established Customer Points Of Contact (CPOCs - see attached list). The pricing information will of course be treated as confidential by each customer, although we will assume that we are free to share technical and availability information.

2. Same as previous footnote.

9. For each switch type provide individual switch processing times for QOR and N-1 (LRN). For QOR provide separate estimates for the release switch and the switch performing the QOR function and database query.

Please provide us with a response indicating your plans to meet this request and a single point of contact within five working days. Provide your responses to each of our Companies via the established Customer Points Of Contacts (CPOCs - see attached list). The pricing information will of course be treated as confidential by each customer, although we will assume that we are free to share technical and availability information.

Address any questions regarding QOR or N-1 (LRN) architectures to Ann Merrell, Bellcore, on (908) 758-5243, fax (908) 758-4343. Ms. Merrell will lead a working team made up of members from each of our companies to work the expedited analysis requested. The core of this work will be to provide an analysis on the technical and economic feasibility of implementing QOR and transitioning at some time to an N-1 (LRN) solution. This includes all compatibility and interconnection issues.

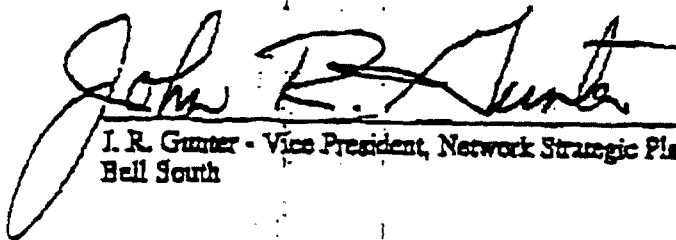
Again, we are requesting that you provide us with this information by April 15 and look forward to the conference call the week of March 25th to obtain a status on your work-in-progress.

Thank you for your immediate attention and cooperation on this extremely important and urgent work request.

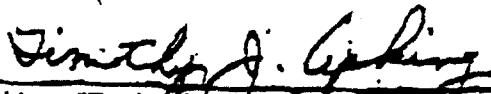
Sincerely,



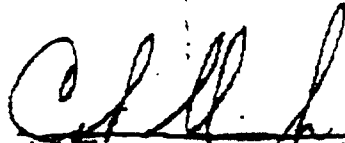
for J. W. Searholts - Chief Technology Officer
Bell Atlantic



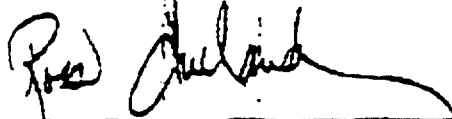
J. R. Gunter - Vice President, Network Strategic Planning and Support
Bell South



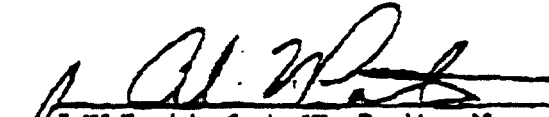
T. J. Apling - Vice President, Network Engineering and Construction
Cincinnati Bell Telephone



C. S. Skrzypczak - ~~Assistant~~ Science and Technology
NYNEX



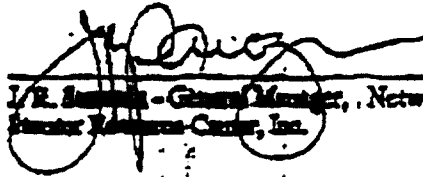
R. K. Ireland - Vice President, Network Engineering
Pacific Bell



J. Walkowiak - Senior Vice President, Network
SBC Telecommunications, Inc.



C. G. Dezenberg - Vice President, Network Technology and
Chief Technology Officer, SNET



J. R. Smith - General Manager, Network Regulatory Research
Sutter Research Center, Inc.



J. Crak - Executive Director, Network Planning
US West

ATTACHMENT

Attachment 7
Page 5 of 5

The North American CPOC Council member & address list is shown below:

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**Staff's Second Quarterly Report on the
Maryland Local Number Portability Consortium**

Appendix 5

Appendix 5

Appendix 5

Switch/SCP Requirements Strategy Options

The Switch Requirements Team has not been able to decide the technical strategy issue of whether to (1) implement LNP in Maryland based on the requirements defined in the Illinois workshop with minor changes or (2) wait for the development of different or additional requirements by Bellcore. Although LRN is still the Consortium call model, there are several technical issues associated with the implementation of LRN. These issues are (1) Query Reduction, and (2) Service Logic/Trigger Standards

Query Reduction

One issue is the option to implement a query reduction method. Query reduction essentially reduces the number of queries that have to be made to the LNP databases for calls to non-ported numbers. Permanent LRN can be implemented with or without this optional capability

Query reduction could be a savings to any service provider because it reduces the number of queries (for calls to non-ported numbers) thereby postponing (or eliminating) some network costs (e.g., signaling infrastructure) while the number of ported numbers is small. BA-MD asserts there has been no detailed analysis indicating that query reduction only results in savings while the number of ported numbers is small. However, MCI metro asserts that a crossover point is reached at low fraction (e.g., 1 %) of ported numbers.

The technologies available to effectuate query reduction include a signaling method known as "look ahead" and another called "caching memory." There are at least two technologies available to implement "look ahead": Query-on-Release and Release-to-Pivot. Caching memory would place a copy of a portion of the LNP database in the switch.

Look ahead capability enables a switch to signal ahead to determine whether a particular call is destined to a ported customer so that a database query will be performed only for calls to ported customers and not performed for calls to non-ported customers. Without "look ahead", a query is launched for every *inter-switch* call to the portability island NPA-NXX. The look ahead approach may cost less when the number of ported numbers is small.

History of this issue: Query-on-Release was evaluated in Illinois and rejected. Switched-based Release-to-Pivot, another "look forward" technology was evaluated in Maryland but was rejected because the proposed approach relied on switch translation information to obtain the LRN instead of from the LNP

database and required reliance on the incumbent network (e.g., routing calls into the incumbent terminating office similar to RCF and then rerouting the call from an earlier office in call path). BA-MD believes that RTP, per-se was not rejected. Lucent is looking into a cache memory option.

Single Platform/Trigger /Service Logic Standard

Another issue is the number of platform trigger and service logic ("PTSL") types to be implemented in the network (e.g., several different platforms and triggers versus one standard). A PTSL essentially stops call processing and signals to the LNP data base that a lookup is needed. The two platforms are AIN and IN and the three trigger types are PODP, TAT, and IN. There are three service logic methods for responding to the database query, the Lucent method, the Nortel method and the Siemens Stromberg-Carlson method. BA-MD would prefer one platform and one trigger type. However, different switch vendors have different preferences and time tables for the different PTSLs. Not all vendors can implement any one type within the 1997 time frame. A single ubiquitous platform and trigger may take additional months or years to develop. BA-MD states, "feedback from two vendors have indicated that the single ubiquitous platform and trigger may take up to a year to develop, not years."

The strategy options are as follows

1. Adopt the Illinois strategy which is for vendors to implement one of several optional triggers to work in harmony with their switches and possibly develop a subsequent single standard for implementation in all switches.
2. Wait for switch vendors or Bellcore to develop a single platform and trigger standard for all switch vendors. Allow sufficient time to fully evaluate the technical and cost implications of various approaches before finalizing the switch requirements.

There is a benefit to having a single service logic/trigger standard. It could reduce the ongoing costs of maintenance and troubleshooting. For Bell Atlantic, implementing two platforms (IN, AIN) and three different triggers (PODP, TAT, IN) means additional initial and ongoing SCP development cost.

History of Issue: Vendors advised the ICC participants that the most efficient and fastest way to proceed was to develop the LRN solution consistent with the existing software platform (such as AIN & IN) on their switches. Nortel advised the industry that using a TAT trigger for the Nortel product was less development than using a PODP trigger, and could be developed to meet a 2Q97 timeframe.

**Staff's Second Quarterly Report on the
Maryland Local Number Portability Consortium**

Appendix 6

Appendix 6

MARYLAND CARRIER ACQUISITION COMPANY, L.L.C.**Policy Questions for MD LNP Steering Committee Consideration**

The Maryland Local Number Portability Legal Committee is in the process of developing an operating agreement that would govern the operations and affairs of the limited liability company that will be established to oversee the administration of the Number Porting Administration Center. Provided below is a list of policy questions that the Legal Committee requests the Steering Committee to resolve regarding the role and responsibilities of the limited liability company, referred to herein as the Maryland Carrier Acquisition Company, L.L.C. ("MCAC").

I. Should the MCAC have the following authority/responsibilities:

A. General Responsibilities

- (1) Issue the Request for Proposals
- (2) Develop and implement procedures for reviewing and selecting winning bids
- (3) Execute and negotiate contracts
- (4) Supervise and oversee database administrator

B. Money

- (1) Collect and disburse money for use of the LNP database (Legal Committee recommends that the database administrator should assume these responsibilities due to tax considerations)
- (2) Collect capital contributions and additional funds from each member carrier to carry out administrative functions of MCAC
 - (A) Should the capital contributions be in the form of cash, services, promises, loans, etc.?
 - (B) How much money should be collected for capital contributions?
 - (C) How should contributions be allocated among member carriers?
 - (D) In what manner should the MCAC be authorized to collect

additional funds from member carriers, e.g., assessment on an as needed basis or lump sum annual contributions?

- (E) How should the additional funds be allocated?
- (F) What controls should be put in place limiting member carrier contributions?
- (G) Who pays for indemnification insurance?
- (H) Should the MCAC be authorized to borrow money?

C. Membership/Rights of Members

- (1) Require all MD certificated local exchange carriers to join the MCAC (or should this be left for the PSC to order)
- (2) Establish voting rights (e.g., one vote per member company or super-majority)
- (3) Appoint officers (under what terms and conditions)
- (4) Role and responsibilities of the Executive Committee
- (5) Role and responsibilities of PSC Staff, including voting rights
- (6) Establish restrictions on transferability of membership
- (7) Allow for voluntary withdrawal of membership

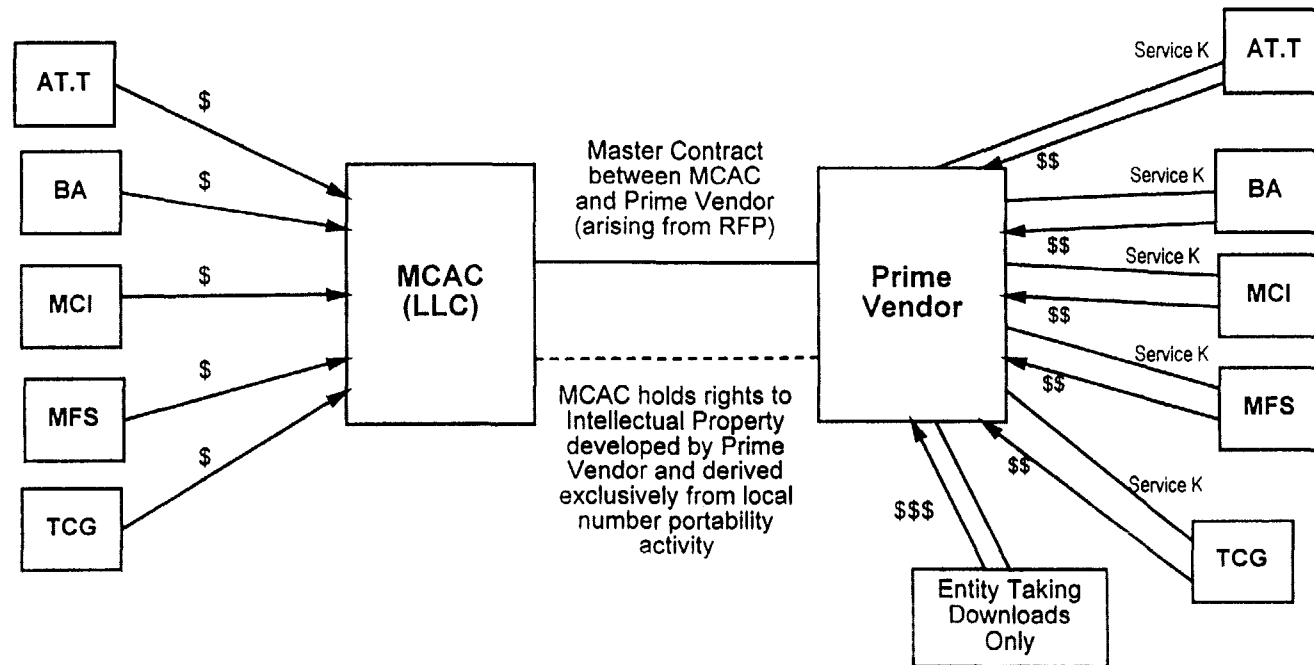
D. Other

- (1) Obtain rights and licenses to intellectual property, including trademarks
- (2) Establish a dispute resolution process (what type)
- (3) Maintain a confidential operating agreement (Legal Committee does not recommend that the operating agreement should be confidential)
- (4) Acquire office space for principal place of business

MARYLAND LOCAL NUMBER PORTABILITY FLOW CHART

**Member
Carriers**

**Member
Carriers**



MCAC = Maryland Carrier Acquisition Company, L.L.C., a Maryland limited liability corporation

\$ = Capital Contributions that will pay the MCAC's administrative expenses

\$\$ = Payments to Prime Vendor based upon a formula that accounts for the number of portable NXXs possessed by each respective member carrier

\$\$\$ = Cost based contractual rate for downloads only

Service K = Service contracts between the Prime Vendor and each member carrier for member carrier usage of Prime Vendor's services and database. The terms and conditions of each service contract will be identical and established in the Master Contract.

Prepared by:

Carville B. Collins, Esquire
Piper & Marbury L.L.P.
for Maryland LNP Steering Committee
April 8, 1996 Draft

April 8, 1996 Draft

**MARYLAND CARRIER ACQUISITION COMPANY, L.L.C.
LIMITED LIABILITY COMPANY OPERATING AGREEMENT**

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for Maryland LNP Steering Committee

April 8, 1996 Draft

MARYLAND CARRIER ACQUISITION COMPANY, L.L.C.

LIMITED LIABILITY COMPANY OPERATING AGREEMENT

This LIMITED LIABILITY COMPANY OPERATING AGREEMENT ("Agreement") is made as of the ____ day of _____, 1996, by and among each of the parties listed on Exhibit A hereto.

RECITALS

WHEREAS, the parties hereto desire to establish Maryland Carrier Acquisition Company, L.L.C. ("MCAC" or the "Company") as a new Maryland limited liability company for the purpose of engaging in business activities related to implementing number portability in Maryland;

WHEREAS, the parties desire to enter into a limited liability company operating agreement as required by the Maryland Limited Liability Company Act and in order to set forth the details of their relationship and the governance and management of the Company;

NOW THEREFORE, in consideration of the premises and the mutual agreements and representations herein contained, and intending to be legally bound hereby, the parties agree as follows:

Article I

Definitions and Rules of Construction

1.1 **Definitions.** The following terms used in this Agreement shall have the following meanings (unless otherwise expressly provided herein):

(a) "**Agreement**" shall mean this operating agreement as originally executed and as amended from time to time.

(b) "**Capital Account**" shall have the meaning set forth in Section 9.4.

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(c) "Chairman" shall refer to the Chairman of the Steering Committee as described in Section 7.1(b).

(d) "Commission" shall refer to the Public Service Commission of Maryland.

(e) "Company" shall refer to Maryland Carrier Acquisition Company, L.L.C.

(f) "Entity" shall mean any individual person, general partnership, limited partnership, limited liability company, corporation, joint venture, trust, business trust, cooperative, association, foreign trust, or foreign business organization

(g) "MCAC" shall refer to Maryland Carrier Acquisition Company, L.L.C.

(h) "Managers" shall mean the Managers identified in Exhibit B or in an executed counterpart to this Agreement and their successors in that capacity, and as further described in Article VI.

(i) "Maryland Act" shall mean the Maryland Limited Liability Company Act, Annotated Code of Maryland, Corporations and Associations Article, Title 4A, § 4A-101 *et seq.*

(j) "Master Contract" shall refer to the contract between the MCAC and the Prime Vendor.

(k) "Member" shall mean each carrier satisfying the eligibility criteria in Section 12.1 that executes this Agreement as a Member or that may hereafter become a Member by executing a counterpart to this Agreement. The names and addresses of the Members are as set forth in Exhibit A.

(l) "Membership Interest" shall mean a Member's entire interest in the MCAC; including the Member's right to participate in the management of the business and affairs of the MCAC; including the right to vote on, consent to, or otherwise participate in any decision or action of or by the Members granted pursuant to this Agreement and the Maryland Act; and including the right to inspect the books and records of the MCAC.

(m) "Prime Vendor" shall mean the Entity that enters into the Master Contract with the MCAC to: (1) establish, administer and maintain the number porting administration

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center, and (2) perform other duties associated with the number porting administration center as directed by MCAC. The Prime Vendor shall be the exclusive provider of permanent number porting administration center services in Maryland and shall provide such services, on a nondiscriminatory basis, directly or indirectly to all carriers or any other telecommunications related service provider needing routing and billing of telecommunications services.

(n) "PSC Representative" shall refer to the representative of the Staff of the Commission whose duties shall be: (1) attend all meetings of the Members, (2) participate in all activities of the MCAC as a non-voting party and as a consultant acting in a supervisory role, (3) attend all Steering Committee meetings and serve as Chairman of the Steering Committee, and (4) perform such other duties as shall be proposed by the Managers and that are accepted by the Staff of the Commission. The "PSC Representative" shall be the person or persons so designated by the Staff of the Commission.

(o) "Secretary" shall refer to the Secretary of the Steering Committee as described in Section 7.1(c).

1.2 Rules of Construction. Unless the context otherwise requires:

- (a) A term has the meaning assigned to it;
- (b) "Or" is not exclusive;
- (c) References in the singular or to "him," "her," "it," "itself," or other like references, and references in the plural or the feminine or masculine reference, as the case may be, shall also, when the context so requires, be deemed to include the plural or singular, or the masculine or feminine reference, as the case may be;
- (d) References to Articles and Sections shall refer to articles and sections of this Agreement, unless otherwise specified; and
- (e) The headings in this Agreement are for convenience and identification only and are not intended to describe, interpret, define or limit the scope, extent, or intent of this Agreement or any provision thereof.

1.3 **Effect of Agreement: Severability and Reformation.** It is the express intention of the Members that, except to the extent a provision of this Agreement expressly incorporated Federal income tax rules by reference to the IRC or the Treasury Regulations or is expressly prohibited or ineffective under the Maryland Act, this Agreement shall govern the relations among the Members in their capacities as Members. If any provision of this Agreement or the application thereof to any person or circumstance shall be held invalid or unenforceable to any extent, (a) such provision shall be ineffective to the extent, and only to the extent, of such unenforceability or prohibition and shall be enforced to the extent permitted by law; (b) such unenforceability or prohibition in any jurisdiction shall not invalidate or render unenforceable such provision as applied (i) to other persons or circumstances or (ii) in any other jurisdiction; and (c) such unenforceability or prohibition shall not affect or invalidate any other provision of this Agreement. To the extent any provision of this Agreement is prohibited or ineffective under the Maryland Act, this Agreement shall be considered amended to the least degree possible in order to make this Agreement effective under the Maryland Act. In the event the Maryland Act is subsequently amended or interpreted in such a way as to make valid any provision of this Agreement that was formerly invalid, such provision shall be considered to be valid from the effective date of such interpretation or amendment.

To the extent any provision of this Agreement is held invalid or unenforceable, the Members shall negotiate, in good faith, concerning an amendment to this Agreement that will achieve, to the extent possible consistent with applicable law, the intended effect of the invalid or unenforceable provision.

Article II

Formation of Company

2.1 **Formation.** The Company was organized by executing and delivering the Articles of Organization to the State Department of Assessments and Taxation in Maryland in accordance with and pursuant to the Maryland Act.